IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellants: B. Mark Hirst	**CERTIFICATE OF FACSIMILE TRANSMISSION** I hereby certify that this paper is being facsimile transmitted to the **United States Patent and Trademark Office, Alexandria, Virginia** on the date below.
Title: SNUBBER CIRCUIT	*Todd A. Rathe* (Printed Name)
Appl. No.: 10/780,927	(Signature)
Filing Date: 02/17/2004	(Date of Deposit)
Examiner: Patel, Rajnikant B.	
Art Unit: 2828	

BRIEF ON APPEAL

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. Real Party in Interest

The real party in interest is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249, Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware corporation, headquartered in Palo Alto, California. The general or managing partner of HPDC is HPQ Holdings, LLC.

2. Related Appeals and Interferences

There are no related appeals or interferences that will directly affect, be directly affected by, or have a bearing on the present appeal, that are known to Appellants or Appellants' patent representative.

3. Status of Claims

Claims 1-45 were originally pending in the application. In a first substantive Office Action mailed on February 28, 2006, Claims 21-30 were withdrawn from consideration based on an earlier restriction requirement dated December 15, 2005 and a subsequent election by Appellants on January 6, 2006. In response to the first substantive Office Action mailed on February 28, 2006, Appellants amended Claims 31, 35 and 39. On December 5, 2006, Appellant filed an appeal from the Final Office Action mailed on July 5, 2006 finally rejecting Claims 1-20 and 31-45. On March 9, 2007, the Examiner reopened prosecution by issuing a new non-final office action objecting to claims 8-16 and rejecting claims 1-7, 17-20 and 31-45. On September 10, 2007, Appellant canceled claims 2-6 and 21-30; amended claims 1, 7-11 and 17 and added claims 46-59. This is an appeal from the Final Office Action mailed on December 31, 2007, objecting to claims 10-16 and rejecting claims 1, 7-9, 17-20 and 31-59. The present appeal is directed to claims 1, 7-20 and 31-59, i.e., all of the presently pending claims that stand rejected in this application.

4. Status of Amendments

No amendments were filed after the Final Office Action dated December 31, 2007.

5. Summary of Claimed Subject Matter

A. Claim 1

Claim 1 is directed to an apparatus which includes an AC switching circuit ((840, Fig 8); (940, 918, 942, 928, Fig. 9); (1040, 1018, 1042, 1028, Fig. 10); (1140, 1142, Fig. 11));, a control circuit (820, Fig. 8) coupled to the AC switching circuit and a biasing snubber circuit ((810, Fig. 8), (920, 922, 972, 924, 916, 914, 970, 912 and 910, Fig. 9); (1020, 1022, 1024, 1072, 1016, 1070, 1012, 1014 and 1010, Fig. 10); (1120, 1123, 1180, 1124, 1172, 1180, 1116, 1180, 1114, 1113 and 1110, Fig. 11); (C1, C2, C3, diodes and resistors,1216, 1282, 1284 and 1280, Fig. 12); (1320, 1386, 1316, 1384, 1320, and 1386, Fig. 13); (1440, Fig. 14) coupled to the AC switching

circuit and the control circuit to capture energy from a circuit-switched by the AC switching circuit and to provide at least a portion of the captured energy to bias the control circuit. (See Para. [0045]; pg. 12, lines 24-26).

B. Claim 31

Claim 31 is directed to a snubber circuit which includes a first energy storage device (910, 920, 1010, 1020, 1120, 1110, (C1 or C2, Fig. 12), 1320, 1410) circuitry ((922, 972, 924, 914, 970, 912, Fig. 9); (1022, 1024, 1072, 1070, 1012, 1014, Fig. 10); (1123, 1180, 1124, 1172, 1180, 1180, 1114, 1113, Fig. 11); (C1, C2, C3, unnumbered diodes and resistors, 1216, 1282, 1284 and 1280, Fig. 12); (1386, 1384, Fig. 13); (1440, Fig. 14) coupled to the first energy storage device to facilitate capturing, by the first energy storage device, energy of a switching circuit and to facilitate resetting of the first energy storage device and a second energy storage device (916, 1016, 1116, 1216, 1316 and 1416) coupled to the first energy storage device to store the captured energy and to provide at least a portion of the captured energy to a control circuit (820, Fig. 8) (See Para. [0045]; pg. 12, lines 24-26).

C. Claim 39

Claim 39 is directed to a method of supplying power to a control circuit (820, Fig. 8). The method includes capturing and energy of a switching circuit in a first energy storage device (910, 920, 1010, 1020, 1120, 1110, (C1 or C2, Fig. 12), 1320, 1410) and providing at least a portion of the captured energy in the first energy storage device to a second energy storage device (916, 1016, 1116, 1216, 1316 and 1416) and providing at least a portion of energy stored on the second energy storage device to power the control circuit (820, Fig. 8) (See Para. [0045]; pg. 12, lines 24-26).

D. Claim 43

Claim 43 is directed to a snubber circuit to power a first circuit (820, Fig. 8). The snubber circuit includes means for capturing energy of a switching circuit ((940, 918, 942, 928, Fig. 9); (1040, 1018, 1042, 1028, Fig. 10); (1140, 1142, Fig. 11));, in

a first energy storage device (910, 920, 1010, 1020, 1120, 1110, (C1 or C2, Fig. 12), 1320, 1410), means ((922, 972, 924, 914, 970, 912, Fig. 9); (1022, 1024, 1072, 1070, 1012, 1014, Fig. 10); (1123, 1180, 1124, 1172, 1180, 1180, 1114, 1113, Fig. 11); (C1, C2, C3, unnumbered diodes and resistors, 1216, 1282, 1284 and 1280, Fig. 12); (1386, 1384, Fig. 13); (1440, Fig. 14) for providing at least a portion of the captured energy in the first energy storage device to a second energy storage device (916, 1016, 1116, 1216, 1316 and 1416) and means (905, 1105, 1305 and 1405) for providing at least a portion of the energy stored on the second energy storage device to power the first circuit (820, Fig. 8) (See Para. [0045]; pg. 12, lines 24-26).

E. Claim 52

Claim 52 recites an apparatus comprising:

a switching circuit ((840, Fig 8); (940, 918, 942, 928, Fig. 9); (1040, 1018, 1042, 1028, Fig. 10); (1140, 1142, Fig. 11));

a control circuit coupled to the AC switching circuit (820, Fig. 8); and

a biasing snubber circuit ((810, Fig. 8), (920, 922, 972, 924, 916, 914, 970, 912 and 910, Fig. 9); (1020, 1022, 1024, 1072, 1016, 1070, 1012, 1014 and 1010, Fig. 10); (1120, 1123, 1180, 1124, 1172, 1180, 1116, 1180, 1114, 1113 and 1110, Fig. 11); (C1, C2, C3, diodes and resistors,1216, 1282, 1284 and 1280, Fig. 12); (1320, 1386, 1316, 1384, 1320, and 1386, Fig. 13); (1440, Fig. 14) coupled to the switching circuit and the control circuit to capture energy from a circuit switched by the switching circuit and to provide at least a portion of the captured energy to bias the control circuit (See Para. [0045]; pg. 12, lines 24-26), wherein the switching circuit includes a first transistor and a second transistor, the first transistor and the second transistor having source terminals connected in common (Figures 9-13).

F. Claim 53

Claim 53 recites apparatus comprising:

a switching circuit (940, 918, 942, 928, Fig. 9); (1040, 1018, 1042, 1028, Fig. 10); (1140, 1142, Fig. 11));

a control circuit coupled to the switching circuit (820, Fig. 8); and

a biasing snubber circuit ((810, Fig. 8), (920, 922, 972, 924, 916, 914, 970, 912 and 910, Fig. 9); (1020, 1022, 1024, 1072, 1016, 1070, 1012, 1014 and 1010, Fig. 10); (1120, 1123, 1180, 1124, 1172, 1180, 1116, 1180, 1114, 1113 and 1110, Fig. 11); (C1, C2, C3, diodes and resistors,1216, 1282, 1284 and 1280, Fig. 12); (1320, 1386, 1316, 1384, 1320, and 1386, Fig. 13); (1440, Fig. 14) coupled to the switching circuit and the control circuit to capture energy from a circuit switched by the switching circuit and to provide at least a portion of the captured energy to bias the control circuit, wherein the switching circuit includes a first snubbing capacitor and a first current limiting device, wherein the switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset (Figs. 9 -13; Figs. 9-13 illustrate an AC switching device while Fig. 14 illustrates a DC switching device).

G. Claim 8

Claim 8 depends from claim 1 and recites:

a first Field Effect Transistor (FET) (940, Figure 9; Figures 11-14) having a first source, a first gate and a first drain;

a second FET (942, Figure 9; Figures 11-14) having a second drain, a second source coupled to the first source and a second gate coupled to the first gate;

a first diode (918, Figure 9; Figures 11-14) having a first anode coupled to the first source and a first cathode coupled to the first drain; and

a second diode (928, Figure 9; Figures 11-14) having a second anode coupled to the second source and a second cathode coupled to the second drain.

H. Claim 17

Claim 17 depends from claim 1 and recites a load (130, Figure 1; 830, Figure 8) coupled to the AC switching circuit. (Figure 1, Paragraph 25, page 4, lines 1-4; page 12, lines 19-23).

I. Claim 33

Claim 33 depends from claim 31 and recites the switching circuit is an AC switching circuit ((840, Fig 8); (940, 918, 942, 928, Fig. 9); (1040, 1018, 1042, 1028, Fig. 10); (1140, 1142, Fig. 11); page 13, lines 17-18)).

J. Claim 35

Claim 35 depends from claim 31 and recites that the second energy storage device provides a bias source for the control circuit of the switching circuit. (Page 13, lines 12-13; lines 23-26)

K. Claim 45

Claim 45 depend from claim 43 and recites that the First Circuit comprise control circuit for controlling the switching circuit. (Page 13, lines 12-13; lines 23-26)

L. Claim 46

Claim 46 depends from claim 1 and recites that the AC switching circuit includes a first transistor and a second transistor, wherein the first transistor and the second transistor have source terminals connected in common. (Figures 9-13).

M. Claim 47

Claim 47 depends from claim 1 and recites that the AC switching circuit includes a first snubbing capacitor and a first current limiting device. The AC switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset. (Figures 9-13).

N. Claim 50

Claim 50 depends from claim 47 and further recites that the AC switching circuit includes a second snubbing capacitor and a second current limiting device, wherein the AC switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset during a positive half cycle and wherein the AC switching circuit is configured to switch the second current

limiting device into circuit when the second snubbing capacitor is reset during a negative half cycle. (Figures 9-13).

O. Claim 56

Claim 56 depends from claim 53 and recites at the switching circuit includes a first transistor and a second transistor, the first transistor and the second transistor having source terminals connected in common. (Figures 9-13).

P. Claim 57

Claim 57 depends from claim 53 and further recites that the switching circuit comprises an AC switching circuit including a second snubbing capacitor and a second current limiting device, wherein the switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset during a positive half AC cycle and wherein the switching circuit is configured to switch the second current limiting device into circuit when the second snubbing capacitor is reset during a negative half AC cycle. (Figures 9-13).

6. Grounds of Rejection to be Reviewed on Appeal

The issues on appeal are **(1)** whether the Examiner erred in rejecting claims 1, 7 and 52 under 35 U.S.C. § 102(b) as being as being anticipated by U.S. Patent No. 5,923,152 (Guerrera); **(2)** whether the Examiner erred in rejecting claims 31, 34, 35, 37-40 and 43 45 under 35 U.S.C. § 102(b) as being as being anticipated by U.S. Patent No. 6,0550161 (Church); **(3)** whether the Examiner erred in rejecting claims 8-9 and 46 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. . 5,923,152 (Guerrera); **(4)** whether the Examiner erred in rejecting claims 17-20 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,923,152 (Guerrera); **(5)** whether the Examiner erred in rejecting claims 32-33, 36 and 41-42 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,0550161 (Church); and **(6)** whether the Examiner erred in rejecting claims 47-51 and 53-58

under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,923,152 (Guerrera) and US Patent No. 5,485,365 (Dan-Harry).

7. Argument

I. Legal Standards

A. Law of Anticipation

Claims 1, 7, 31, 34, 35, 37-45 and 52 have been rejected under 35 U.S.C. § 102(b), which states:

> A person shall be entitled to a patent unless –
>
> ...
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States,
>
> ....

Under Section 102, a claim is anticipated, i.e., rendered not novel, when a prior art reference discloses every limitation of the claim. In re Schreiber, 128 F.3rd 1473, 1477 (Fed. Cir.1997). Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." In re Mills, 916 F.2d 680, 682 (Fed. Cir. 1990). "Rejections under 35 U.S.C. § 102(a) are proper only when the claimed subject matter is identically disclosed or described in the prior art." In re Arklely, Eardley, and Long, 172 U.S.P.Q. 524, 526 (CCPA 1972).

Claim terms will be given their ordinary and accustomed meaning, unless there is "an express intent to impart a novel meaning to [the] claim [term]" by the patentee. York Prods., Inc. v. Cent. Tractor Farm & Family Ctr., 99 F.3d 1568, 1572 (Fed. Cir. 1996); Sage Prods. v. Devon Indus., Inc., 126 F.3d 1420, 1423 (Fed. Cir. 1997). The ordinary and accustomed meaning of a claim term is determined by reference to dictionaries, encyclopedias, and treatises available at the time of the patent. See Texas Digital Systems, Inc., 308 F.3d at 1203. Such references are

always available for claim construction purposes and are neither extrinsic nor intrinsic evidence. See Texas Digital Systems, Inc. v. Telegenix, Inc., 308 F.3d 1193, 1202-03 (Fed. Cir. 2002).

In order to impart a specific meaning to a claim term, i.e., for the inventor to be her own lexicographer, such lexicography must appear "with reasonable clarity, deliberateness, and precision." In re Paulsen, 30 F.3d 1475, 1480 (Fed. Cir. 1994). However, intrinsic evidence may be consulted to determine the definite meaning of a claim term that is unclear. CCS Fitness, Inc. v. Brunswick Corp., 288 F.3d 1359, 1367 (Fed. Cir. 2002). A claim term may be redefined without any express statement of redefinition in the specification. Bell Atl. Network Servs., Inc. v. Covad Communications Group, Inc., 262 F.3d 1258, 1268 (Fed. Cir. 2001). "[A] claim term will not carry its ordinary meaning if the intrinsic evidence shows that the patentee distinguished that term from prior art on the basis of a particular embodiment" or "described a particular embodiment as important to the invention."

B. Law of Obviousness

Claims 8-9, 17-20, 32-33, 36, 46-51 and 53-59 are rejected under 35 U.S.C. § 103(a), which states:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The legal standards under 35 U.S.C. § 103(a) are well-settled. Obviousness under 35 U.S.C. § 103(a) involves four factual inquires: 1) the scope and content of the prior art; 2) the differences between the claims and the prior art; 3) the level of ordinary skill in the pertinent art; and 4) secondary considerations, if any, of nonobviousness. See Graham v. John Deere Co., 383 U.S. 1, 148 U.S.P.Q. 459 (1966).

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. In re Piasecki, 745 F.2d 1468, 1471-72, 223 U.S.P.Q. 785, 787-88 (Fed. Cir. 1984). "[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." In re Fritch, 972 F.2d 1260, 1265, 23 U.S.P.Q. 2d 1780, 1783 (Fed. Cir. 1992).

As noted by the Federal Circuit, the "factual inquiry whether to combine references must be thorough and searching." McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 60 U.S.P.Q. 2d 1001 (Fed. Cir. 2001). Further, it "must be based on objective evidence of record." In re Lee, 277 F.3d 1338, 61 U.S.P.Q. 2d 1430 (Fed. Cir. 2002). The teaching or suggestion to make the claimed combination must be found in the prior art, and not in the applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q. 2d 1438 (Fed. Cir. 1991). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 U.S.P.Q. 2d 1430 (Fed. Cir. 1990). "It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to '[use] that which the inventor taught against its teacher.'" Lee (citing W.L. Gore v. Garlock, Inc., 721 F.2d 1540, 1553, 220 U.S.P.Q. 303, 312-13 (Fed. Cir. 1983)). Teaching away from the claimed invention is a strong indication of non-obviousness and an improper combination of references. U.S. v. Adams, 383 U.S. 39 (1966).

II. The Examiner's Rejection of Claims 1, 7 and 52 under 35 U.S.C. § 102(b) as being as being anticipated by U.S. Patent No. 5,923,152 (Guerrera) Should Be Reversed Because Guerrera Does Not Disclose Every Limitation of Each of the Claims.

The claimed invention is not anticipated under § 102 unless each and every element of the claimed invention is found in the prior art. (Hydratech, Inc. v. Monochronal Antibodies, Inc., Fed. Cir. 1986). Accordingly, the rejection of these claims under 35 U.S.C. § 102(b) is improper and should be reversed.

A. Claim 1

Independent Claim 1 is directed to an apparatus which includes a biasing snubber circuit. The biasing snubber circuit is coupled to an AC switching circuit and a control circuit to capture energy from a circuit switched by the switching circuit. The snubber circuit provides at least a portion of the captured energy to bias the control circuit.

Guerrera fails to disclose (1) a biasing snubber circuit coupled to an AC switching circuit or (2) a biasing snubber circuit that provides at least a portion of captured energy to bias a control circuit that is coupled to an AC switching circuit.

First, the snubber circuit of Guerrera is NOT coupled to an AC switching circuit. In contrast, the snubber circuit disclosed by Guerrera is merely connected to a DC switching circuit. This is quite evident in Figure 1 which requires a bridge rectifier between the AC source and the rest of the circuit. Although the Examiner asserts that Guerrera discloses the claimed subject matter on an AC switching circuit, this is incorrect. In fact, the circuit disclose by Guerrera could not be used on an AC switching circuit. As one of ordinary skill in the art would recognize, if the circuit shown in Figure 2 of Guerrera were alternatively employed with an AC switching circuit, during the negative half cycle of the AC waveform, diode 66 or switch 40 would experience an uncontrolled voltage causing diode 66 or switch 40 to be destroyed.

Second, Guerrera fails to disclose an apparatus having a snubber circuit that captures energy from a circuit switched by switching circuit and that provides at least a portion of the captured energy to bias a control circuit. In contrast, Guerrera merely discloses a circuit wherein energy captured by a snubber circuit is retransmitted back to its load. The captured energy is not used to bias a control circuit. Accordingly, the rejection of claim 1 based upon Guerrera should be reversed. The rejection of claim 7, which depends from claim 1, should be reversed for at least the same reasons.

B. Claim 52

Claim 52 recites an apparatus which includes a switching circuit, a control circuit coupled to the AC switching circuit and a biasing snubber circuit coupled to the switching circuit end of the control circuit to capture energy from a circuit switched by the switching circuit and to provide at least a portion of the captured energy to bias the control circuit.

As noted above with respect to the rejection of claim 1, Guerrera fails to disclose (1) a biasing snubber circuit connected to an AC switching circuit or (2) a biasing snubber circuit that provides captured energy to bias a control circuit of the AC switching circuit.

In addition to such claim limitations, claim 52 further recites that the switching circuit includes a first transistor and a second transistor, the first transistor and a second transistor having source terminals connected in common.

Guerrera fails to disclose first and second transistors having source terminals connected in common. In direct contrast, Guerrera requires that its switching devices be connected source to drain. For example, switching devices 40 and 46 of Figure 2 are connected source to drain. Switching devices 40 and 46 to not have source terminals connected in common. Accordingly, the rejection of claim 52 should be reversed.

III. The Examiner's Rejection of Claims 31, 34, 35, 37, 39-40 and 43-45 under 35 U.S.C. § 102(b) as being as being anticipated by U.S. Patent No. 6,055,161 (Church) Should Be Reversed Because Church Does Not Disclose Every Limitation of Each of the Claims.

A. Claim 31

Claim 31 recites the first entity storage device and a second entity storage device. Claim 31 also recites circuitry coupled to the first energy storage device to facilitate capturing by the first energy storage device energy of a switching circuit and to facilitate resetting of the first entity storage device. The second entity storage device stores the captured energy and provides at least a portion of the captured energy to a control circuit. In other words, the energy captured from the switching circuit is transferred from the first energy storage device to the second entity storage device. The second entity storage device provides captured energy to a control circuit.

Church fails to disclose (1) the transfer of energy captured from a switching circuit from a first energy storage device to a second energy storage device or (2) providing the captured energy to a control circuit. First, as one of ordinary skill in the art would recognize, the boost converter circuit shown in Figure 2 of Church (relied upon by the Examiner to reject Claim 31) does not transfer captured energy from a switching circuit from a first energy storage device to second energy storage device. Captured energy is not transferred from capacitor 102 to capacitor 104 or vice versa. In contrast, with the circuit shown in Figure 2, capacitors 102 and 104 are simultaneously charged or discharged. The circuit shown in Figure 5 also simultaneously charges and discharges its capacitors.

Second, Church does not provide captured energy to a control circuit. In contrast, any captured energy is provided to the load. Accordingly, the rejection of claim 31 should be reversed. The rejection of claims 34-35 and 37, which depend from claim 31, should be reversed for at least the same reasons.

B. Claim 35

Claim 35 depends from claim 31 and recites that the second energy storage device provides a bias for the control circuit of the switching circuit.

Church fails to disclose a second energy storage device that provides a bias source for the control circuit of the switching circuit, the same circuit from which energy is captured. Accordingly, rejection of claim 35 should be reversed for least this additional reason.

C. Claims 39 and 43

Claim 39 recites a method of supplying power to a control circuit. The method includes capturing energy of a switching circuit in a first energy storage device, providing at least a portion of the captured energy in the first energy storage device to a second energy storage device and providing at least a portion of energy stored on the second energy storage device to power the control circuit.

Claim 43 recites a snubber circuit to power a first circuit. The snubber circuit includes means for capturing energy of a switching circuit in a first energy storage device, means for providing at least a portion of the captured energy in the first energy storage device to a second energy storage device and means for providing at least a portion of energy stored on the second energy storage device to power the control circuit.

Church fails to disclose (1) transferring energy captured from a switching circuit from a first energy storage device to a second energy storage device or (2) providing the captured energy to a control circuit. First, as one of ordinary skill in the art would recognize, the boost converter circuit shown in Figure 2 of Church (relied upon by the Examiner to reject Claim 31) does not transfer captured energy from a switching circuit from a first energy storage device to second energy storage device. Captured energy is not transferred from capacitor 102 to capacitor 104 or vice versa. In contrast, with the circuit shown in Figure 2, capacitors 102 and 104 are simultaneously charged or discharged.

Second, Church does not provide captured energy to a control circuit. In contrast, any captured energy is provided to the load. Accordingly, the rejection of claims 39 and 43 should be reversed. The rejection of claims 40 and 44-45, which depend from claims 39 and 43, respectively, should be reversed for at least the same reasons.

D. Claim 45

Claim 45 depends from claim 43 and recites that the first circuit comprises a control circuit for controlling a switching circuit, the same circuit from which energy is captured.

Church fails to disclose a second energy storage device that provides a bias source for the control circuit of the switching circuit, the same circuit from which energy is captured. Accordingly, the rejection of claim 45 should be reversed for least this additional reason.

IV. The Examiner's Rejection of Claims 8-9 and 46 under 35 U.S.C. § 103(a) as being as being unpatentable over U.S. Patent No. 5,923,152 (Guerrera) Should Be Reversed Because It Would Not Be Obvious to Modify Guerrera to Include Every Limitation of the Claims.

A. Claim 8

Claim 8 depends from claim 1 and recites:

a first Field Effect Transistor (FET) having a first source, a first gate and a first drain;

a second FET having a second drain, a second source coupled to the first source and a second gate coupled to the first gate;

a first diode having a first anode coupled to the first source and a first cathode coupled to the first drain; and

a second diode having a second anode coupled to the second source and a second cathode coupled to the second drain.

As acknowledged by the Examiner, Guerrera failed to disclose the specific electrical circuit recited in claim 8. As a result, the Examiner attempts to argue that it would simply be obvious to completely reconfigure the circular Guerrera does to meet the limitation of claim 8 "since it has been held that a mere reversal of the essential working part of a device involve only routine skill in the art." (Office Action dated December 31 County thousand seven, page 4).

The Rejection of claim 8 should be reversed because the Examiner has failed to establish a prima facie case of obviousness. The alleged motivation lacks merit. First, the Examiner has failed to indicate what specific parts one of ordinary skill in the art would allegedly "reverse" in Guerrera.

Second, any rearrangement of "parts" in the circuit of Guerrera would clearly change the principle of operation and attended functioning of the circuit of Guerrera. As set forth in MPEP 2143.01 THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE, it is well settled law that "if proposed modification would render the prior art invention they modified unsatisfactory for its intended purpose, then there is no suggestion or motivation make the proposed modification. *In re Gordon*, 733 F.2D 900 (Fed. Cir. 1984). As also noted by MPEP 2143.01 THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE, it is well settled law that "if the proposed modification or combination the prior art would change the principle of operation of the prior art invention be modified, the teaching the reference are not sufficient to render the claims prima facie obvious." *In re Ratti*, 270 F.2d 810 (CCPA 1959). Accordingly, rejection of claim 8 should be reversed. The rejection of claim 9, which depends from claim 8, should be reversed for at least the same reasons.

B. Claim 46

Claim 46 depends from claim 1 and recites that the AC switching circuit includes a first transistor and a second transistor, wherein the first transistor and the second transistor have source terminals connected in common.

As acknowledged by the Examiner, Guerrera fails to disclose that the switching circuit includes a first transistor and a second transistor, the first transistor and a second transistor having source terminals connected in common. As a result, once again, the Examiner attempts to rely upon the assertion that it would be obvious as a "mere reversal of parts." Once again, the Examiner has failed to establish a prima facie case of obviousness said such a modification would clearly render Guerrera unsatisfactory for its intended purpose and change the principle of operation of Guerrera. (See MPEP 2143.01). Accordingly, the rejection of claim 46 should be reversed.

V. The Examiner's Rejection of Claims 17-20 under 35 U.S.C. § 103(a) as being as being unpatentable over U.S. Patent No. 5,923,152 (Guerrera) Should Be Reversed Because It Would Not Be Obvious to Modify Guerrera to Include Every Limitation of the Claims.

Claims 17-20 depend from claim 1. For the same reasons discussed above with respect to the rejection of claim 1, the rejection of claims 17-20 should be reversed.

VI. The Examiner's Rejection of Claims 32-33, 36, 41 and 42 under 35 U.S.C. § 103(a) as being as being unpatentable over U.S. Patent No. 6,055,161 (Church) Should Be Reversed Because It Would Not Be Obvious to Modify Church so As to Include Every Limitation of Each of the Claims.

Claims 32-33 and 36 depend from claim 31. Claims 41 and 42 depend from claim 39. The rejection of claims 32-33 and 36 should be reversed for the same reasons discussed above with respect to the rejection of claim 1 under 35 USC 102(b) based upon Church. The rejection of claims 41 and 42 should be reversed for the same reasons discussed above with respect to the rejection of claim 39 under 35 USC 102(b) based upon Church. The rejection of claims 33 and 41 should be reversed for the following additional reason.

Claim 33 recites that the switching circuit is an AC switching circuit. Claim 41 also recites that the switching circuit comprises an AC switching circuit.

Church fails to disclose the snubber circuit of claim 31, wherein the switching circuit is an AC switching circuit as recited in claim 33. In contrast, Church only discloses a boost converter circuit which operates on a DC input and a DC output.

Moreover, it would not be obvious to modify the circuit of Figure 2 of Church to alternatively operate on an alternating current. As one of ordinary skill in the art would recognize, during the negative half cycle of the AC waveform, switch one 114 would be destroyed. This would subsequently result in diodes 106, 108 in 118 also being destroyed. Accordingly, the Examiner has failed to establish a prima facie case of obviousness since such a modification would clearly render Church unsatisfactory for its intended purpose and change the principle of operation of Guerrera. (See MPEP 2143.01).

Moreover, the Examiner has also failed to establish a prima facie case of obviousness by failing to even allege where Church satisfies the limitations of claim 33. The Office Action merely discusses Guerrera in his rejection of claim 33 based upon Church. As noted above with respect to the rejection of claim 1, the circuit of Guerrera can also not be used with an AC switching circuit. Accordingly, rejection of claims 33 and 41 should be reversed.

VII. The Examiner's Rejection of Claims 47-51 and 53-59 under 35 U.S.C. § 103(a) as being as being unpatentable over U.S. Patent No. 5,923,152 (Guerrera) in view of 5,923,152 (Dan-Harry) Should Be Reversed Because It Would Not Be Obvious to Modify Guerrera based upon Dan-Harry to Include Every Limitation of the Claims.

A. Claims 47 and 53

Claim 47 depends from claim 1 and recites that the AC switching circuit includes a first snubbing capacitor in a first current limiting device. The AC switching circuit is configured to switch the first current limiting device into circuit on the first snubbing capacitor is reset.

Claim 53 recites an apparatus comprising:

a switching circuit;

a control circuit coupled to the switching circuit; and

a biasing snubber circuit coupled to the switching circuit and the control circuit to capture energy from a circuit switched by the switching circuit and to provide at least a portion of the captured energy to bias the control circuit, wherein the switching circuit includes a first snubbing capacitor and a first current limiting device, wherein the switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset.

Neither Guerrera nor Dan-Harry disclose or suggest an AC switching circuit that includes a first snubbing capacitor in a first current limiting device, wherein the AC switching circuit is configured to switch the first current limiting device into circuit on the first snubbing capacitor is reset. As acknowledged by the Examiner, Guerrera fails to disclose such limitations. As a result, the Examiner attempts to additionally rely upon Dan-Harry and refers to Figure 2.

However, the circuit shown in Figure 2 of Dan-Harry is not even remotely relevant to the limitations of claim 47. The circuit shown in Figure 2 of Dan-Harry merely discloses a power conversion system in which an AC input is immediately rectified by bridge rectifier. Nowhere does Dan-Harry disclose a current limiting device that is switched into circuit when a snubbing capacitor is reset.

The Examiner has failed to establish a prima facie case of obviousness. The Examiner cannot even point to what he considers to be the current limiting device or where Dan-Harry allegedly switches the current-limiting device into circuit when a snubbing capacitor is reset. The Examiner merely makes the conclusory and unsupported statement that "Dan-Harry teaches utilization of the similar technique for current limiting device (figure 2)." (Office Action dated December 31, 2007, page 5). Accordingly, the rejection of claims 47 and 53 should be reversed. The rejection of claims 48-51, which depend from claim 47, should be reversed for at least the same reasons. The rejection of claims 54-59, which depend from claim 53, should be reversed for at least the same reasons.

B. Claims 50 and 57

Claim 50 depends from claim 47 and further recites that the AC switching circuit includes a second snubbing capacitor and a second current limiting device, wherein the AC switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset during a positive half cycle and wherein the AC switching circuit is configured to switch the second current limiting device into circuit when the second snubbing capacitor is reset during a negative half cycle.

Claim 57 depends from claim 53 and further recites that the switching circuit comprises an AC switching circuit including a second snubbing capacitor and a second current limiting device, wherein the switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset during a positive half AC cycle and wherein the switching circuit is configured to switch the second current limiting device into circuit when the second snubbing capacitor is reset during a negative half AC cycle.

Neither Guerrera nor Dan-Harry disclose an AC switching circuit that includes a second snubbing capacitor and a second current limiting device, wherein the AC switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset during a positive half cycle and wherein the AC switching circuit is configured to switch the second current limiting device into circuit when the second snubbing capacitor is reset during a negative half cycle. An acknowledgment that Guerrera fails to disclose such, the Examiner attempts to additionally rely upon Dan-Harry.

However, Dan-Harry clearly does not satisfy the deficiencies of Guerrera. Dan-Harry clearly does not disclose and AC switching circuit that is configured to switch the second current limiting device into circuit when the second snubbing capacitor is reset during a negative half cycle. This can't be more clear from the simple fact that the circuit disclosed by Dan-Harry immediately converts any AC input into a DC current with a bridge rectifier. How can Dan-Harry possibly switch a

first current limiting device into circuit when a first snubbing capacitor is reset DURING A POSITIVE HALF CYCLE when Dan-Harry merely operates on a direct current? How can Dan-Harry possibly switch a second current limiting device into circuit when a second snubbing capacitor is reset DURING A NEGATIVE HALF CYCLE when Dan-Harry merely operates on a direct current? Accordingly, the rejection of claims 50 and 57 should be reversed for this additional reason.

C. Claim 56

Claim 56 depend from claim 53 and recites that the switching circuit includes a first transistor and a second transistor, wherein the first transistor and the second transistor had source terminals connected in common.

As noted above with respect to the rejection of claim 52, Guerrera fails to disclose first and second transistors having source terminals connected in common. In direct contrast, Guerrera requires that its switching devices be connected source to drain. For example, switching devices 40 and 46 of Figure 2 are connected source to drain. Switching devices 40 and 46 do not have source terminals connected in common. Dan-Harry does not satisfy this deficiency. Accordingly, the rejection of claim 56 should be reversed.

Conclusion

In view of the foregoing, the Appellants submit that: **(1)** claims 1, 7 and 52 are not properly rejected under 35 U.S.C. § 102(b) as being as being anticipated by U.S. Patent No. 5,923,152 (Guerrera) and are therefore patentable; **(2)** claims 31, 34, 35, 37-40 and 43 45 are not properly rejected under 35 U.S.C. § 102(b) as being as being anticipated by U.S. Patent No. 6,0550161 (Church)and are therefore patentable; **(3)** claims 8-9 and 46 are not properly rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,923,152 (Guerrera) and are therefore patentable; **(4)** claims 17-20 are not properly rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,923,152 (Guerrera) and are therefore patentable; **(5)** claims 32-33, 36 and 41-42 are not properly rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,0550161 (Church) and are

therefore patentable; and **(6)** claims 47-51 and 53-58 are not properly rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,923,152 (Guerrera) and US Patent No. 5,485,365 (Dan-Harry) and are therefore patentable. Accordingly, Appellants respectfully request that the Board reverse all claim rejections and indicate that a Notice of Allowance respecting all pending claims should be issued.

Summary

For the foregoing, it is submitted that the Examiner's rejections are erroneous, and reversal of the rejections is respectfully requested.

Dated this 2nd day of June, 2008.

Respectfully submitted,

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CLAIMS APPENDIX

1. (Previously Presented) An apparatus comprising:

an AC switching circuit;

a control circuit coupled to the AC switching circuit; and

a biasing snubber circuit coupled to the switching circuit and the control circuit to capture energy from a circuit switched by the switching circuit and to provide at least a portion of the captured energy to bias the control circuit.

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Previously Presented) The apparatus of claim 1 wherein the biasing snubber circuit comprises first electrical circuitry to provide charge for storage on a charge storage device during a first phase of an AC flow and second electrical circuitry to provide charge for storage on the charge storage device during a second phase of the AC flow.

8. (Previously Presented) The apparatus of claim 1 wherein the AC switching circuit comprises:

a first Field Effect Transistor (FET) having a first source, a first gate and a first drain;

a second FET having a second drain, a second source coupled to the first source and a second gate coupled to the first gate;

a first diode having a first anode coupled to the first source and a first cathode coupled to the first drain; and

a second diode having a second anode coupled to the second source and a second cathode coupled to the second drain.

9. (Previously Presented) The apparatus of claim 1 wherein the AC switching circuit comprises:

a first Field Effect Transistor (FET) having a first source, a first gate and a first drain;

a second FET having a second drain, a second source coupled to the first source and a second gate coupled to the first gate;

a first diode having a first cathode coupled to the first source and a first anode coupled to the first drain; and

a second diode having a second cathode coupled to the second source and a second anode coupled to the second drain.

10. (Previously Presented) The apparatus of claim 1 wherein the biasing snubber circuit comprises:

a first and second series resistor/capacitor pair correspondingly coupled to a first and a second drain of a first and a second Field Effect Transistor (FET) of the AC switching circuit;

a first diode coupled between a first source of the first FET and the first series resistor/capacitor pair, an anode of the first diode coupled to the first source and a cathode of the first diode coupled to the first series resistor/capacitor pair;

a second diode coupled between a second source of the second FET and the second resistor/capacitor pair, an anode of the second diode coupled to the second source and a cathode of the second diode coupled to the second series resistor/capacitor pair;

a third diode, an anode of the third diode coupled to the cathode of the first diode;

a fourth diode, an anode of the fourth diode coupled to the cathode of the second diode and a cathode of the fourth diode coupled to a cathode of the third diode; and

a capacitor coupled between coupled cathodes of the third and fourth diodes and the first and second sources, the first and second sources coupled together.

11. (Previously Presented) The apparatus of claim 1 wherein the biasing snubber circuit comprises:

a first terminal of a first capacitor and a first terminal of a second capacitor correspondingly coupled to a first and a second drain of a first and a second Field Effect Transistor (FET) of the AC switching circuit;

a first series linear-device/diode pair coupled between a second terminal of the first capacitor and a first source of the first FET;

a second series linear-element/diode pair coupled between a second terminal of the second capacitor and a second source of the second FET;

a first diode, wherein an anode of the first diode is coupled to the second terminal of the first capacitor;

a second diode, wherein an anode of the second diode is coupled to the second terminal of the second capacitor and a cathode of the second diode is coupled to a cathode of the first diode; and

a bias capacitor coupled between coupled cathodes of the first and second diodes and the first and second sources, the first and second sources coupled together.

12. (original) The apparatus of claim 11 wherein the first series linear-device/diode pair comprises a first resistor and a third diode and the second series linear-device/diode pair comprises a second resistor and a fourth diode.

13. (original) The apparatus of claim 11 wherein the first series linear-device/diode pair comprises a first inductor and a third diode and the second series linear-device/diode pair comprises a second inductor and a fourth diode.

14. (original) The apparatus of claim 13 wherein anodes of third and fourth diodes are coupled to the coupled sources and cathodes of the third and fourth diodes are correspondingly coupled to the first and the second inductors.

15. (original) The apparatus of claim 11 wherein the biasing snubber circuit further comprises:

a first terminal of a first resistor and a first terminal of a second resistor correspondingly coupled to the anode of the first diode and the anode of the second diode;

a full wave diode bridge rectifier having four bridge diodes, wherein a first terminal of the full wave bridge rectifier coupled to the bias capacitor, a second terminal of the full wave bridge rectifier coupled to a second terminal of the first resistor, a third terminal of the full wave bridge rectifier coupled to a second terminal of the second resistor and a fourth terminal of the full wave bridge rectifier coupled to a ground node, the ground node comprising the coupled first and second sources.

16. (original) The apparatus of claim 11 wherein the biasing snubber circuit further comprises:

a first resistor wherein a first terminal of the first resistor is coupled to the first terminal of the first capacitor and a second terminal of the first resistor is coupled to the second terminal of the first capacitor; and

a second resistor wherein a first terminal of the second resistor is coupled to the first terminal of the second capacitor and a second terminal of the second resistor is coupled to the second terminal of the second capacitor.

17. (Previously Presented) The apparatus of claim 1 further comprising a load coupled to the AC switching circuit.

18. (original) The apparatus of claim 17 wherein the load comprises an inductive heating device.

19. (original) The apparatus of claim 17 wherein the load comprises a single phase induction motor.

20. (original) The apparatus of claim 17 wherein the load comprises a fuser.

21. (Canceled)

22. (Canceled)

23. (Canceled)

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (Canceled)

30. (Canceled)

31. (previously presented) A snubber circuit comprising:

a first energy storage device;

circuitry coupled to the first energy storage device to facilitate capturing, by the first energy storage device, energy of a switching circuit and to facilitate resetting of the first energy storage device; and

a second energy storage device coupled to the first energy storage device to store the captured energy and to provide at least a portion of the captured energy to a control circuit.

32. (original) The snubber circuit of claim 31 wherein the switching circuit is a DC switching circuit.

33. (original) The snubber circuit of claim 31 wherein the switching circuit is an AC switching circuit.

34. (original) The snubber circuit of claim 31 wherein the circuitry comprises a plurality of diodes.

35. (Previously Presented) The snubber circuit of claim 31 wherein the second energy storage device provides a bias source for the control circuit of the switching circuit.

36. (original) The snubber circuit of claim 31 wherein the second energy storage device provides a bias source for a fan.

37. (original) The snubber circuit of claim 31 wherein at least one of the first and second energy storage devices comprises a capacitor.

38. (original) The snubber circuit of claim 31 wherein at least one of the first and second energy storage devices comprises an inductor.

39. (Previously presented) A method of supplying power to a control circuit comprising:

capturing energy of a switching circuit in a first energy storage device;

providing at least a portion of the captured energy in the first energy storage device to a second energy storage device; and

providing at least a portion of energy stored on the second energy storage device to power the control circuit.

40. (original) The method of claim 39 wherein the first circuit comprises a control circuit for the switching circuit.

41. (original) The method of claim 39 wherein the switching circuit comprises an AC switching circuit.

42. (original) The method of claim 39 wherein the switching circuit comprises a DC switching circuit.

43. (original) A snubber circuit to power a first circuit comprising:

means for capturing energy of a switching circuit in a first energy storage device;

means for providing at least a portion of the captured energy in the first energy storage device to a second energy storage device; and

means for providing at least a portion of energy stored on the second energy storage device to power the first circuit.

44. (original) The snubber circuit of claim 43 wherein at least one of the first energy storage device and the second energy storage device comprise capacitors.

45. (original) The snubber circuit of claim 43 wherein the first circuit comprises a control circuit for controlling the switching circuit.

46. (Previously Presented) The apparatus of claim 1, wherein the AC switching circuit includes a first transistor and a second transistor, the first transistor and the second transistor having source terminals connected in common.

47. (Previously Presented) The apparatus of claim 1, wherein the AC switching circuit includes a first snubbing capacitor and a first current limiting device, wherein the AC switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset.

48. (Previously Presented) The apparatus of claim 47, wherein the first current limiting device comprises a resistor.

49. (Previously Presented) The apparatus of claim 47, wherein the first current limiting device comprises an inductor.

50. (Previously Presented) The apparatus of claim 47, wherein the AC switching circuit includes a second snubbing capacitor and a second current limiting device, wherein the AC switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset during a positive half cycle and wherein the AC switching circuit is configured to switch the second current limiting device into circuit when the second snubbing capacitor is reset during a negative half cycle.

51. (Previously Presented) The apparatus of claim 47, wherein the first current limiting device comprises an inductor and wherein the AC switching circuit is configured to pump charge during snubbing of current and during reset of the first snubbing capacitor.

52. (Previously Presented) An apparatus comprising:

a switching circuit;

a control circuit coupled to the AC switching circuit; and

a biasing snubber circuit coupled to the switching circuit and the control circuit to capture energy from a circuit switched by the switching circuit and to provide at least a portion of the captured energy to bias the control circuit, wherein

the switching circuit includes a first transistor and a second transistor, the first transistor and the second transistor having source terminals connected in common.

53. (Previously Presented) An apparatus comprising:

a switching circuit;

a control circuit coupled to the switching circuit; and

a biasing snubber circuit coupled to the switching circuit and the control circuit to capture energy from a circuit switched by the switching circuit and to provide at least a portion of the captured energy to bias the control circuit, wherein the switching circuit includes a first snubbing capacitor and a first current limiting device, wherein the switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset.

54. (Previously Presented) The apparatus of claim 53, wherein the first current limiting device comprises a resistor.

55. (Previously Presented) The apparatus of claim 53, wherein the first current limiting device comprises an inductor.

56. (Previously Presented) The apparatus of claim 53, wherein the switching circuit includes a first transistor and a second transistor, the first transistor and the second transistor having source terminals connected in common.

57. (Previously Presented) The apparatus of claim 53, wherein the switching circuit comprises an AC switching circuit including a second snubbing capacitor and a second current limiting device, wherein the switching circuit is configured to switch the first current limiting device into circuit when the first snubbing capacitor is reset during a positive half AC cycle and wherein the switching circuit is configured to switch the second current limiting device into circuit when the second snubbing capacitor is reset during a negative half AC cycle.

58. (Previously Presented) The apparatus of claim 53, wherein the first current limiting device comprises an inductor and wherein the switching circuit is configured to pump charge during snubbing of current and during reset of the first snubbing capacitor.

59. (Previously Presented) The apparatus of claim 53, wherein the switching circuit is configured to supply initial power to the control circuit.

EVIDENCE APPENDIX

There is no evidence previously submitted under 37 C.F.R. §§ 1.130, 1.131 or 1.132 or other evidence entered by the Examiner and relied upon by Appellant in this appeal. Accordingly, the requirements of 37 C.F.R. §§ 41.37(c)(1)(ix) are satisfied.

RELATED PROCEEDINGS APPENDIX

There are no decisions rendered by a Court of the Board in a proceeding identified in the Related Appeals and Interferences section. Accordingly, the requirements of 37 C.F.R. §§ 41.37(c)(1)(x) are satisfied.